Summary report on the

Seventh intercountry meeting of national malaria programme managers from HANMAT and PIAM-net countries

WHO-EM/MAL/379/E

Amman, Jordan
25–26 November 2015

World Health Organization
Regional Office for the Eastern Mediterranean

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1. Introduction

The WHO Regional Office for the Eastern Mediterranean in collaboration with the Government of Jordan convened a meeting of the national malaria programme managers of countries in the Horn of Africa Network for Monitoring Antimalarial treatment (HANMAT) and the Pakistan, Islamic Republic of Iran and Afghanistan Malaria Network (PIAM-Net) from 25 to 26 November 2015. The objectives of the meeting were:

- to enable members from malaria endemic countries of the networks to share their results of studies on monitoring antimalarial drug efficacy;
- to update the regional database with surveillance data on antimalarial drug efficacy; and
- to plan country activities for monitoring drug efficacy and for updating national drug policies in 2016.

In attendance were malaria managers and/or focal points for drug resistance monitoring in 8 countries of the WHO Eastern Mediterranean Region: Afghanistan, Djibouti, Islamic Republic of Iran, Pakistan, Saudi Arabia, Somalia, Sudan and Yemen. Ethiopia, Eritrea and South Sudan from the WHO African Region were represented by the focal point from the WHO Regional Office for Africa.

Dr Hoda Atta, Acting Director of Communicable Diseases and Regional Adviser, Malaria Control and Elimination, inaugurated the meeting. She noted that while the role of the networks had been mainly coordinating surveillance of drug resistance, the meetings and training courses of the networks sometimes included other topics such as pharmacovigilance and the use of serological techniques. She asked participants to review the objectives of the networks and address all issues related to case management and drug resistance in line with the Global Technical Strategy.

2. Summary of discussions

The meeting discussed artemisinin resistance and monitoring efficacy and the plan for its containment. The emergence of artemisinin resistance in four countries in the Mekong subregion presents a major threat to global malaria control and elimination efforts. Artemisinin resistance is defined as delayed parasite clearance (day 3 positivity rate); this represents a partial resistance not necessarily associated with treatment failures of artemisinin-based combination therapy (ACT) or artesunate monotherapy. If day 3 positivity increases to ≥10%, artemisinin resistance is suspected, and must be subsequently confirmed with a study of artesunate monotherapy over 7 days. Most patients who have delayed parasite clearance following treatment with ACT clear their infections. However, this is not the case in Cambodia and Thailand, where there is concomitant resistance to the partner drugs such as mefloquine and piperaquine.

A molecular marker of artemisinin resistance was recently identified. Mutations in the Kelch 13 (K13) propeller region are associated with delayed parasite clearance both in vitro and in vivo. The identification of the K13 marker for artemisinin resistance has allowed for a more refined definition of resistance that includes information on the genotype. However, as the list of mutations associated with artemisinin resistance is still evolving, so the definition of artemisinin resistance will continue to evolve.

There have been some reports of delayed parasite clearance during routine therapeutic efficacy studies of ACT conducted in Africa, but these reports have not been consistent over time. K13 mutations have also been reported from many African countries. However, these mutations have not been associated with slow parasite clearance. In South America, there have been reports on delayed parasite clearance from Surinam and Guyana. However confirmatory studies did not confirm high day 3 positivity and K13 mutations.

Drug resistance monitoring plays a critical role in the global fight against artemisinin resistance. Monitoring must continue to ensure that the recommended ACTs are effective, that changes in national treatment policies can be implemented in a timely manner, and that artemisinin resistance can be detected early. Assessment of K13 propeller region mutants will greatly facilitate the tracking of artemisinin resistance as it emerges.

Focal persons of malaria endemic countries shared their updates on the latest results of therapeutic efficacy studies and treatment policies. Countries implementing elimination strategies such as Saudi Arabia have few cases, making it difficult to conduct drug efficacy studies. In Saudi Arabia there was a workshop on updating the national policy of malaria treatment in November 2015; the policy document is under review and will be available soon. In the Islamic Republic of Iran treatment and diagnosis are free of charge for all: antimalarial drugs are only available in the public health facilities. Monitoring drug efficacy of falciparum cases is routine practice for all cases on day 3, 7, 14, 28 since 2012. The latest results of monitoring of antimalarial drugs showed 100% adequate clinical and parasitological response (ACPR) for the first-line antimalarial for both falciparum and vivax.

In collaboration with WHO a new study on therapeutic efficacy of chloroquine in vivax cases has started, noting that majority of cases in the Islamic Republic of Iran are vivax.

In Afghanistan the results of a therapeutic efficacy study shows that artemether–lumefantrine has 100% ACPR on day 28 in both falciparum and vivax arms. Treatment was faster in vivax patients compared to falciparum (at day 1, 75% versus 63%, $P<0.05$, at day 2, 97% versus 96% ($p>0.2$). There are different drugs available in the market with no authorization for controlling the importation of the drug in the public and private sectors mainly due to a weak drug regulatory system.

Activities implemented in Djibouti on malaria case management include training on diagnosis, quantification of ACTs, rapid diagnostic tests and laboratory products. Challenges faced by the programme have been monitoring antimalarial efficacy and quality assessment of malaria diagnosis.

In Pakistan, studies were conducted in Balochistan/Zhob and Fedeally Administered Tribal Agencies/Kurram Agency in 2015. The results achieved so far on the efficacy of dihydroartemisinin–piperaquine are encouraging. There has been a ban on the introduction and use of oral monotherapies in 2008 but conditional permission to produce injectable artemether has been given and sold to hospitals and for pre-referral cases. As there are 300 manufacturing companies the Ministry of Health is making strenuous efforts to impose a complete ban on this drug. Challenges facing the malaria control programme for proper management of malaria cases in Pakistan include availability of medicines that are not in the national drug policy in the market, use of injectable medicines for uncomplicated malaria and incomplete treatment of very large numbers of malaria cases without confirmation since many doctors do not rely on rapid diagnostic tests or microscopy results.

In Sudan, currently artemether–lumefantrine (AL) is the interim first-line treatment of uncomplicated malaria. With availability of the results of the therapeutic efficacy studies on artesunate and sulfadoxine–